Amendments to the Specification:

Please add the following text before the paragraph beginning on page 6, line 8:

<u>FIG. 1C shows a process 60 to detect available channels.</u>

Please replace paragraph beginning on page 9, line 4 with the following amended paragraph:

In one exemplary sequence in the embodiment of FIG. 1A, the mobile station requests two channels, and in this example, channels 50 and 52 in FIG. 1A at ~~890.0~~ <u>890.2</u> MHz and 890.4 MHz are available. The base station responds by sending the ~~890.0~~ <u>890.2</u> and 890.4 MHz frequency identification to the mobile station. The mobile station in turn updates its transceiver with the frequency information, and the transceiver can listen for data in all frames associated with the 890.2 and 890.4 MHz channels. In this example, two frequency channels have been bonded together to increase transmission bandwidth.

Please replace paragraph beginning on page 9, line 21 with the following amended paragraph:

The dynamic channel allocation relies on an accurate and fast determination of available channels using a radio frequency sniffer or a radio frequency detector such as a sniffer 111 (FIG. 2A). In the embodiment of FIG. 2A, the radio frequency sniffer 111 is provided on a mobile handset or communicator device where the sniffer can sense available channels from the mobile user's perspective. The sniffer includes an idle channel measurement unit that measures the channel quality and takes a receive signal strength indicator (RSSI) or other appropriate signal quality. The output from the sniffer 111 is used to determine whether a particular channel is available. The advantage of this embodiment is that the sniffer senses channel availability locally<u>.</u> In a second embodiment, the radio frequency sniffer is provided at a base station. In this embodiment, the sniffer is connected to powerful amplifiers and sensitive antenna and thus can pull in weak signals. Because the sniffer is shared by many mobile communicator devices, the second embodiment potentially offers cost-saving by eliminating the sniffer circuitry on each mobile handset or wireless device. Also, the sniffer has to dynamically sense the radio environment to ensure that changes in user position and signal power and frequency allocation

are reflected in the current status provided by the sniffer. Thus, the sensing operation is repeated many times each second.

Please replace paragraph beginning on page 10, line 15 with the following amended paragraph:

A process 60 for detecting available channels is shown in FIG. 1C. First, the channel number is reset (step 62). Next, the process measures the channel quality of the current channel, in one case an RSSI or other appropriate signal quality measurement (step 64). The measurement can be done once or can be done several times and averaged. Next, the idle channel measurement is compared against a threshold value (step 66). The threshold value can be a value reflecting a rolling average/peak detection of past measurements or a block average or peak detection of consecutive measurements. If the channel signal measurement is above the threshold value, then the current channel is marked as being active (step 68). Otherwise, the channel is marked as being unavailable. The current channel number is incremented (step 70), and the process 60 loops back to step 64 to determine the next channel's availability. This is done until all channels have been processed.

Please replace paragraph beginning on page 11, line 14 with the following amended paragraph:

FIG. 2A shows a block diagram of an exemplary multi-mode wireless communicator device 100 fabricated on a single silicon integrated chip. In one implementation, the device 100 is an integrated CMOS device with radio frequency (RF) circuits, including a cellular radio core 110, a short-range wireless transceiver core 130, and a sniffer 111 (which, for this example, may consist mainly of a Schottky diode and other receiver circuitry to detect radio frequency). The sniffer [[11]] 111 includes an idle channel measurement unit that measures the channel quality such as RSSI or other appropriate signal quality. The output from the sniffer 111 is used to determine whether a particular channel is available.

Please replace paragraphs beginning on page 12, line 13 and page 12, line 18 with the following amended paragraph:

The RF circuits can exist along side digital circuits, including a reconfigurable processor core 150, a high-density memory array core 170, and a router 190. The high-density memory array core 170 can include various memory technologies such as flash memory and dynamic random access memory (DRAM), among others, on different portions of the memory array core. The reconfigurable processor core 150 can include one or more processors 151 such as MIPS processors and/or one or more digital signal processors (DSPs) 153, among others. The reconfigurable processor core 150 has a bank of efficient processors 151 and a bank of DSPs 153 with embedded functions. These processors 151 and 153 can be configured to operate optimally on specific problems and can include buffers on the receiving end and buffers on the transmitting end ~~such the buffers shown in FIG. 1~~. For example, the bank of DSPs 153 can be optimized to handle discrete cosine transforms (DCTs) or Viterbi encodings, among others. Additionally, dedicated hardware 155 can be provided to handle specific algorithms in silicon more efficiently than the programmable processors 151 and 153. The number of active processors is controlled depending on the application, so that power is not used when it is not needed. This embodiment does not rely on complex clock control methods to conserve power, since the individual clocks are not run at high speed, but rather the unused processor is simply turned off when not needed.

Please replace paragraph beginning on page 13, line 20 with the following amended paragraph:

The reconfigurable processor core 150 controls the cellular radio core [[10]] <u>110</u> and the short-range wireless transceiver core 130 to provide a seamless dual-mode network integrated circuit that operates with a plurality of distinct and unrelated communications standards and protocols such as Global System for Mobile Communications (GSM), General Packet Radio Service (GPRS), Enhance Data Rates for GSM Evolution (Edge) and Bluetooth™ or WLAN. The cell phone core 110 provides wide area network (WAN) access, while the short-range wireless transceiver core 130 supports local area network (LAN) access. The reconfigurable processor core 150 has embedded read-only-memory (ROM) containing software such as IEEE802.11, GSM, GPRS, Edge, and/or Bluetooth™ or WLAN protocol software, among others.

Please replace paragraph beginning on page 14, line 7 with the following amended paragraph:

In one embodiment, the cellular radio core 110 includes a transmitter/receiver section that is connected to an off-chip antenna ~~(not shown)~~. The transmitter/receiver section is a direct conversion radio that includes an I/Q demodulator, transmit/receive oscillator/clock generator, multi-band power amplifier (PA) and PA control circuit, and voltage-controlled oscillators and synthesizers. In another embodiment of the transmitter/receiver section ~~112~~, intermediate frequency (IF) stages are used. In this embodiment, during cellular reception, the transmitter/receiver section converts received signals into a first intermediate frequency (IF) by mixing the received signals with a synthesized local oscillator frequency and then translates the first IF signal to a second IF signal. The second IF signal is hard-limited and processed to extract an RSSI signal proportional to the logarithm of the amplitude of the second IF signal. The hard-limited IF signal is processed to extract numerical values related to the instantaneous signal phase, which are then combined with the RSSI signal.

Please replace paragraph beginning on page 15, line 7 with the following amended paragraph:

Turning now to the short-range wireless transceiver core 130, the short-range wireless transceiver core 130 contains a radio frequency (RF) modem core 132 that communicates with a link controller core 134. The processor core 150 controls the link controller core 134. In one embodiment, the RF modem core 132 has a direct-conversion radio architecture with integrated VCO and frequency synthesizer. The RF-unit 132 includes an RF receiver connected to an analog-digital converter (ADC), which in turn is connected to a modem ~~116~~ performing digital modulation, channel filtering, AFC, symbol timing recovery, and bit slicing operations. For transmission, the modem is connected to a digital to analog converter (DAC) that in turn drives an RF transmitter.

Please replace paragraph beginning on page 17, line 15 with the following amended paragraph:

The router 190 can send packets in parallel through the separate pathways of cellular or Bluetooth™ or WLAN. For example, if a Bluetooth™ or WLAN connection is established, the router 190 knows which address it is looking at and will be able to immediately route packets

using another connection standard. In doing this operation, the router 190 pings its environment to decide on optimal transmission medium. If the signal reception is poor for both pathways, the router 190 can send some packets in parallel through both the primary and secondary communication channel (cellular and/or Bluetooth™ or WLAN) to make sure some of the packets arrive at their destinations. However, if the signal strength is adequate, the router 190 prefers the Bluetooth™ or WLAN mode to minimize the number of subscribers using the capacity-limited and more expensive cellular system at any give time. Only a small percentage of the ~~device~~ devices 100, those that are temporarily outside the Bluetooth or WLAN coverage, represents a potential load on the capacity of the cellular system, so that the number of mobile users can be many times greater than the capacity of the cellular system alone could support.